Listing of the Claims:

This listing of the claims will replace all prior versions and listings of claims in the application.

1 – 81. (Canceled)

82. (New) A method of transforming a representation of a mine having at least one pit, the method comprising:

obtaining a block model of the pit in which material is divided into a plurality of blocks, the block model representing the mine;

processing the blocks of the block model with a processor to define a plurality of clusters each comprising a plurality of blocks;

forming, with the processor, a cone for each cluster propagating upwardly by precedence arcs extending from each cluster; and

defining, with the processor, clumps of material from the intersection of the cones, the clumps comprising volumes of material not crossed by precedence arcs;

generating, with the processor, an initial block sequence from the defined clumps, the block sequence representing a potential order of extraction of blocks from the mine;

determining, with the processor, a value for time of extraction for each of the blocks of the block model from the block sequence; and

reprocessing the blocks of the block model with the processor based on the determined time values to define a plurality of revised clusters and processing the revised clusters with the processor to define a plurality of clumps representing the mine.

83. (New) The method according to claim 82 wherein processing the blocks of the block model to form clusters is performed based on spatial position of blocks relative to one another.

84. (New) The method of claim 82, further comprising processing the blocks of the block model with the processor to form clusters based on at least one further criteria comprising a variable selected from the group comprising value of material, grade of material, and material type.

85. (New) The method according to claim 82 comprising controlling the effect of the determined time values with the processor so that clusters are formed from blocks which are more spatially fragmented but more closely follow an optimal extraction schedule in the representation of the mine.

86. (New) The method according to claim 82 comprising controlling the effect of the determined time values so the clusters are formed from blocks which are spatially compact but ignore an optimal extraction sequence in the representation of the mine.

87. (New) The method according to claim 82 wherein when a plurality of clusters has been defined, the clusters are ordered in time by the processor and the plurality of cones are propagated upwardly from each cluster in order of time by the processor, and wherein any blocks already assigned to a first cone are not included in a second cone or any subsequent cone, and any blocks assigned to the second cone are not included in any subsequent cone and so-on.

88. (New) The method according to claim 82, comprising determining a revised block sequence with the processor to thereby further represent the mine.

89. (New) A method of extracting material from a mine comprising transforming a representation of a mine as claimed in claim 82, and extracting material from the mine based on the transformed representation.

90. (New) An apparatus for transforming a representation of a mine having at least one pit comprising:

a processor for receiving a block model of the pit in which material is divided into a plurality of blocks, the block model representing the mine;

the processor also being for:

processing the blocks of the block model to define a plurality of clusters each comprising a plurality of blocks;

forming a cone for each cluster propagating upwardly by precedence arcs

extending from each cluster; and

defining clumps of material from the intersection of the cones, the clumps comprising volumes of material not crossed by precedence arcs;

generating an initial block sequence from the defined clumps, the block sequence representing a potential order of extraction of blocks from the mine;

determining a value for time of extraction for each of the blocks of the block model from the block sequence; and

reprocessing the blocks of the block model based on the determined time value to define a plurality of revised clusters and processing the revised clusters to define a plurality of clumps representing the mine.

91. (New) The apparatus according to claim 90, wherein the processor is arranged to process the blocks of the block model to form clusters based on spatial position of blocks relative to one another.

92. (New) The apparatus of claim 90, wherein the processor is arranged to process the blocks of the block model to form clusters based on at least one further criteria comprising a variable selected from the group comprising value of material, grade of material, and material type.

93. (New)The apparatus according to claim 90 wherein the processor is arranged to control the effect of the determined time values so that clusters are formed from blocks which are more spatially fragmented but more closely follow an optimal extraction schedule in the representation of the mine.

94. (New) The apparatus according to claim 90 wherein the processor is arranged to control the effect of the determined time values so the clusters are formed from blocks which are spatially compact but ignore an optimal extraction sequence in the representation of the mine.

95. (New) The apparatus according to claim 90 wherein when a plurality of clusters has been defined, the clusters are ordered in time by the processor and the plurality of

cones are propagated upwardly from each cluster in order of time by the processor, and wherein any blocks already assigned to a first cone are not included in a second cone or any subsequent cone, and any blocks assigned to the second cone are not included in any subsequent cone and so-on.

96. (New) The apparatus according to claim 82, wherein the processor is arranged to determine a revised block sequence to thereby further represent the mine.